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XXIII. On the Ipoh or Upas Poison used by the Jacoos and other Aboriginal Tribes of the Malay Peninsula. By Lieut. T. J. NEWBOLD, A.D.C. to Brigadier-General WILSON, C.B. Communicated by P. M. ROGET, M.D. Sec. R.S.

Received January 26,—Read June 15, 1837.

TO tip the slender arrows propelled from the *Súmpitan*, or blow-pipe, the aborigines of the Malay Peninsula make use of three preparations of the *Ipoh* or *Upas* poison, distinguished by the names *Króhi*, *Ténnik* or *Kennik*, and *Malláye*.

The *Króhi* is extracted from the root and bark of the *Ipoh* tree, the roots of the *Túba* and *Kópah*; red arsenic and the juice of limes.

The *Ténnik* is made in the same manner as the *Króhi*, leaving out the *Kópoh* root.

The *Malláye* poison, which is accounted the most potent of the three, is prepared from the roots of the *Túba*, the *Peráchi*, the *Kópah* and the *Chéy*, and from that of the shrub *Malláye*; hence its name.

The process of concocting these preparations is as follows: the roots are carefully selected and cut at a particular age of the moon; I believe about the full. The woody fibre is thrown away, and nothing but the succulent bark used. This is put into a *quáli* (a sort of pipkin made of earth), with as much soft water as will cover the moss, and kneaded well together. This done, more water is added, and the whole is submitted to a slow heat over a charcoal fire until half the water has evaporated. The decoction is next strained through a cotton cloth, again submitted to slow ebullition until it attains the consistence of syrup. The red arsenic (*Warangan*) rubbed down in the juice of the sour lime, the *Limou Assam* of the Malays, is then added and the mixture poured into small bamboos, which are carefully closed up ready for use. Some of the tribes add a little opium, spices and saffron, some the juice of the *Lanchar* and the bones of the *Súnggat* fish burnt to ashes.

A number of juggling incantations are performed and spells gibbered over the seething caldron by the *Poyangs*, (a class of men supposed by this superstitious race to be in league with the powers of darkness,) by whom the fancied moment of the projection of the poisoning principle is as anxiously watched for as that of the philosopher's stone, or the elixir vitæ by the alchymists and philosophers of more enlightened races of men.

When recently prepared the *Ipoh* poisons are all of a dark liver brown colour, of the consistence of syrup, and emit a strong narcotic odour. The deleterious principle appears to be volatile, as the efficacy of the poison diminishes by keeping.

The arrows are very slight slips of wood, scarcely the thickness of a crow-quill,

and generally about eight inches long, tapering to a fine point ; this is coated with the poison, which is allowed to insipidate thereon for the space of an inch or so. They then cut the arrow slightly all round at the part where the coat of poison ends, consequently it almost invariably snaps off on piercing the flesh of the victim, leaving the envenomed point rankling in the wound. At the other end of the arrow is a cone of light pith-like wood, which is fitted to the tube of the *Súmpitan*, and assists materially in the propulsion and direction of the arrow.

From experiments I caused some of the aborigines to make with these poisoned weapons on living animals in my presence, I am enabled to offer the Society the following results, showing the efficacy of the *Kennik* preparation. A squirrel died in 12 minutes ; young dogs in from 37 to 40 minutes ; a fowl in two hours : one lingered $7\frac{1}{2}$ hours. Three arrows tipped with the *Mallaye* preparation, it is affirmed, would kill a man in less than an hour, and a tiger in less than three hours.

According to the aborigines the only remedy against the poison is the recent juice of the *Lemmah-kapiting*, rubbed round and into the wound, and afterwards over the limb into which the puncture has been made. The arrow seldom penetrates farther than an inch, snapping off as mentioned above.

The following are the symptoms evinced by a strong healthy pup, struck in the right hip ; penetration of the arrow about one fourth of an inch only. Six minutes after being wounded it demonstrated signs of uneasiness, yawned and moaned. In $10\frac{1}{2}$ minutes it grew sick ; vomited the contents of the stomach ; continued vomiting at intervals, bringing up small quantities of a white frothy-looking fluid. In 16 minutes the muscles of the chest and diaphragm were powerfully excited ; slight convulsive twitchings in the legs. In 20 minutes it fell on its side, foamed much at the mouth ; again got on its legs, and struggled violently as if to get loose. In 23 minutes it was still foaming at the mouth, and had an involuntary alvine evacuation ; it then again fell down after painful retching, made ineffectual attempts to vomit, and continued in this state, the efforts to relieve the stomach and chest gradually becoming weaker, till at 37 minutes after the insertion of the poison it died strongly convulsed.

On dissection by Mr. MAURICE, the surgeon of the 23rd Regiment, M.N.I., a frothy saliva-like fluid was discovered in the stomach ; the gall-bladder distended with bile ; the intestines unusually pale. In the cavity of the thorax on each side were found about four drachms of a serous fluid. The brain and spinal chord, I regret to say, were not examined.

By reason of the complicated nature of its preparation, it would be difficult to decide from the above train of symptoms whether the *Upas* poison should or should not be classed, as it has been by some writers, among the narcotico-acrid vegetable poisons.

Quere, whether the *Lemmah-kapiting*, a shrub said by natives to be the only antidote against it, bears any botanical affinity to the *Feuillea cordifolia*, ascertained by Monsieur DRAPIEZ to be a most powerful antidote against vegetable poison. The

native names of the plants I have mentioned will, it is hoped, afford botanists visiting the Straits of Malacca, or the islands of the Indian Archipelago, some clue to a more scientific investigation, both of the plants of which the poison is composed, and of its antidote, the *Lemnah-kapítинг*. With regard to the *Ipoh* tree of the Malay peninsula, from the description of it given to me by the natives, I much question its identity with the *Anchar* or *Upas* tree of the Javan forests, described by Dr. HORSFIELD, and the *Arbor toxicaria* of RHUMPHIUS.

It may be superfluous to add, that in the wildest tales related to me by the aborigines regarding the deadly qualities of this poison, there is nothing to corroborate or give rise to the extravagant fictions with which FOERSCH so easily amused the credulity of half Europe.

Bellary, Madras Presidency,
August 7, 1836.